RESILIENZA ORGANIZZATIVA ALLE MINACCE DELLO SPAZIO CYBER

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CYBER 4.0
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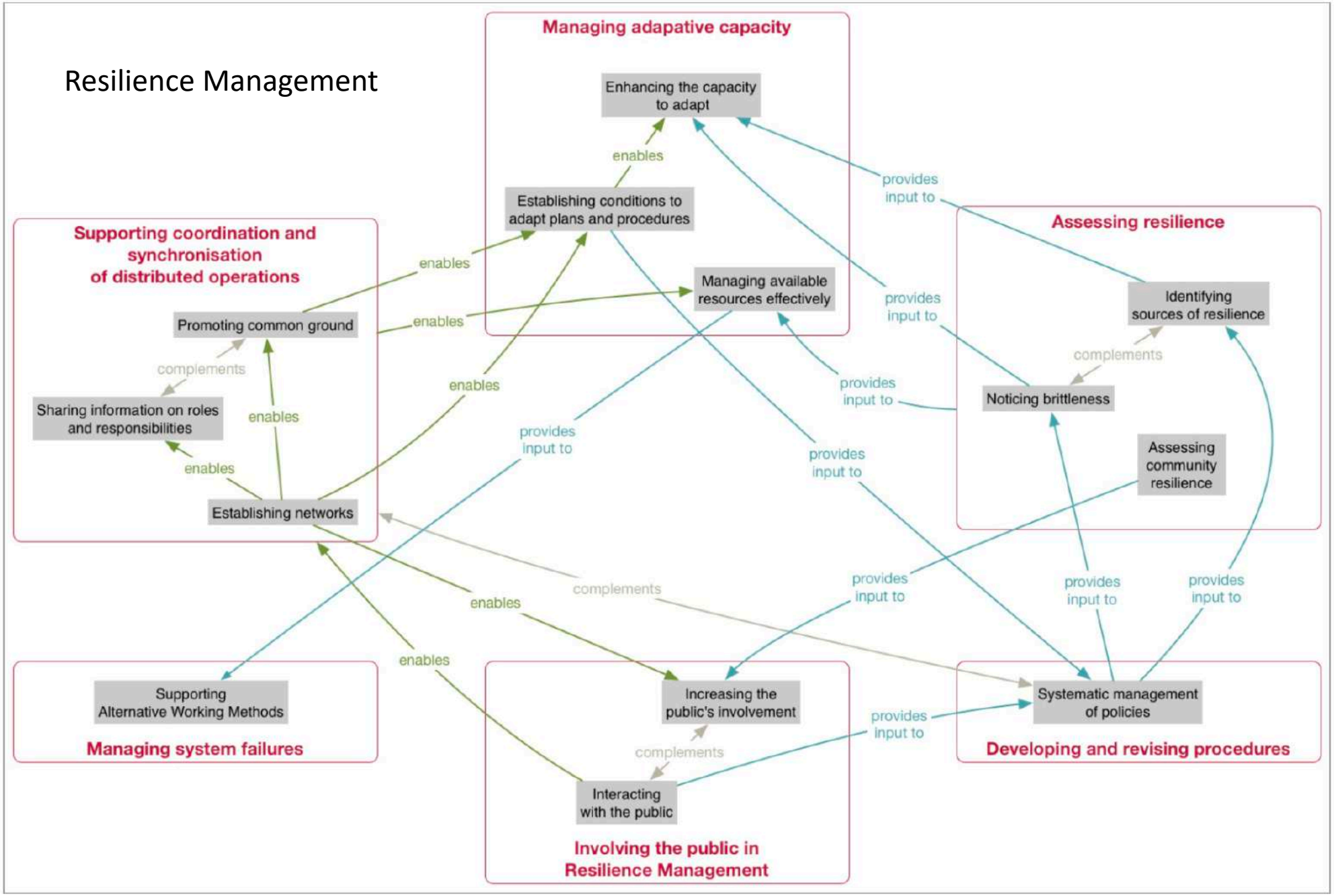
Fonte: adattato da World Economic Forum Global Risks Perception Survey 2016–2020

Resilience Management



https://h2020darwin.eu/

Theoretical background: NAT VS HRO

NORMAL ACCIDENT THEORY

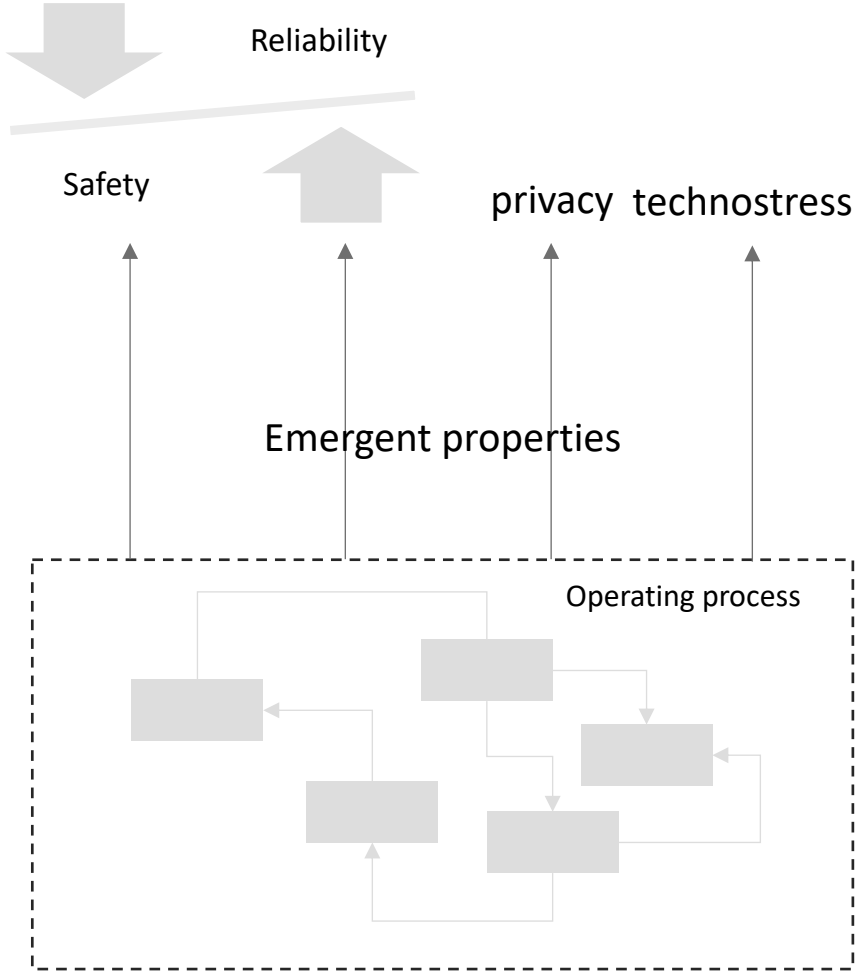
- Interactive complexity and tight coupling of technological systems
- Localized failures spread/disrupt/damage larger systems
- System accidents are inevitable or “normal”

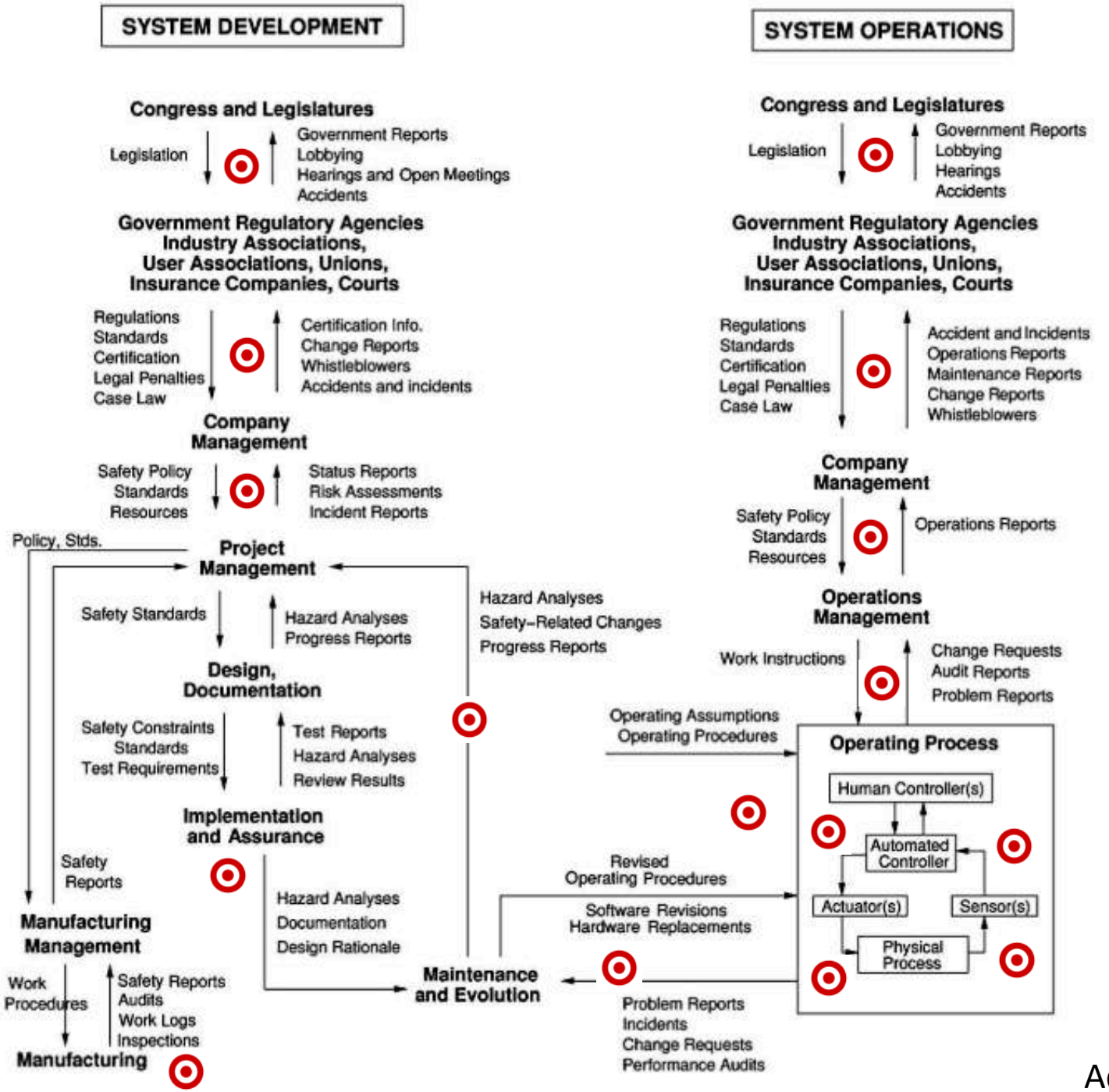
HIGH RELIABILITY ORGANIZATIONS

- Hallmarks
  - Preoccupation with failure
  - Reluctance to simplify
  - Sensitivity to operations
  - Commitment to resilience
  - Deference to experience
- Safety enacted on the front lines during crisis

A SYSTEM APPROACH TO SAFETY

- Complexity: interactive, structural, dynamic, etc.
- Coupling: time, control, data or information, structural, etc.
- Hazard: event (or condition) being avoided
- Engineering design: search for optimal/acceptable tradeoffs between engineered system properties, physical limitations and various system objectives (e.g. performance)
- Accidents caused by dysfunctional interactions instead than component failure





Cyber-physical attacks

Adapted from Leveson et al. 2009

Le sfide per le organizzazioni

- Preparare le organizzazioni a rispondere alla minaccia cyber integrando
  - Crisis management: fragmented coordination
  - Resilience: multi-level operational control
- Strumenti di difesa
  - Scenario based training for situational understanding
  - Agile architecture maintenance and evolution
  - Active defense: digital twins, sandboxes, AI, etc.

Riferimenti

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